# A system and a method for handling laser-communication multiplexing in chaotic secure communications

## ABSTRACT

A system and a method for handling laser-communication multiplexing in chaotic secure communications are disclosed. The messages to be multiplexed are encoded by chaotic laser signals of a transmitter system. The transmitted signals are then coupled to another chaotic system, the receiver system, so that the receiver and the transmitter are asymptotically synchronized. The decoding of the multiplexed messages encoded by chaotic behaviors is achieved by using a low-pass filter. This low-pass filter can effectively increase the fractal dimension of the chaotic system and enhance the periodicity of the transmitted time sequences, so that the multiplexed messages can be recovered.